The Math/Stats Colloquium
Department of Mathematics and Statistics
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Identifiability and Indistinguishability of Linear Compartmental Models

Wed Mar 15, 2023, MH320

Abstract: An important question that arises when modeling is if the unknown parameters can be determined from data, the *parameter estimation* problem. A key first step is to ask which parameters can be determined given perfect data. This is called the *structural identifiability* problem. We examine this question for a class of models called linear compartmental models, used in pharmacokinetics, physiology, cell biology, toxicology, and ecology. We also examine a related problem called *indistinguishability*, which examines if two distinct models yield the same dynamics. We will consider the underlying graph corresponding to our model and use tools from graph theory and computational algebra to analyze our models.

Background: One semester linear algebra.

About the speaker: Nicolette Meshkat received her Ph.D. from UCLA and is currently an Associate Professor at Santa Clara University. Her research is in applications of algebra to problems in systems biology. She enjoys running, hiking, skiing, and pronouncing long words like "identifiability" and "indistinguishability".

Snacks in MacQuarrie Hall 331B at 2:40pm
Talk starts at 3:00pm

For more information, see our full schedule at:

`http://www.timhsu.net/colloq/`